1852MNRAS..12..181J

On the Graduation of Circles. By Mr. R. L. Jones.

The principle proposed by Mr. Jones may, perhaps, be understood from the following description: the details would require a drawing.

The circle to be divided must have a permanent or temporary vertical axis on which it turns horizontally. A frame to which a telescope is attached, which also carries a steel straight-edge for drawing the divisions and a powerful microscope for viewing them when drawn, turns on the upper part of the axis. This apparatus can be clamped to the circle, and the circle can be clamped to a horizontal bed.

On a wall at some distance from the circle two dots are inserted, so that the angle between the dots shall subtend 90° at the centre of the circle. It will be seen that, by a process of *stepping*, not unlike observing with a repeating table, the circle can be divided into four *equal* arcs, and from the over or underlapping at the end, the correction of one of the dots, to make the angle *exactly* 90°, can be readily computed. These tentative fine divisions might be cut very lightly on a portion of the limb outside the final graduation. This correction being made, the accurate division into four arcs of 90° might be effected at once.

A similar proceeding would divide the circle into any number of aliquot parts. By an intermediate dot the arcs of 90° might be subdivided to arcs of 45°. Everything remaining steady, the bisection of a division by the microscope and of a dot by the telescope should always bring back the apparatus into a given state.

Mr. Jones proposes to set out at the same distance two points which subtend an angle of 1°; its truth can be proved and the error corrected by stepping from one of the divisions into 45° to another division. It would be easy to subdivide this degree into any required number of parts, as at the distance of about 100 yards, 60 inches subtend an angle of 1°. When this space was once ascertained to be = 1°, there would be no need of further experiments, as the position of the circle bed and the prototype division need not suffer any disturbance.

Mr. Cooper, of Markree Castle, County Sligo, exhibited a MS. sheet of the star-map now constructing by his astronomer, Mr. A. Graham, from the joint observations of himself and Mr. Graham. The scale is four times that of the celebrated Berlin charts. In the *Monthly Notice* for December last, p. 32, a description will be found of the manner in which the observations (on which the star-maps are founded) were made; and the beauty of the manual execution of the maps by Mr. Graham, corresponds with the excellence of the determination of the places of the stars.

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1852MNRAS..12..182.

In the brief notice of Professor von Boguslawsky, in the last Annual Report, a serious oversight was committed by the translator. It is said that the magnetical instruments of the Breslau Observatory were furnished by the British Government, at the recommendation of Humboldt and of the British Association. This is not correct. The instruments were presented by the British Assoation, *without any assistance from the Government*, and on their own knowledge. Neither did the series of observations begin so early as is stated, for the instruments were not sent till 1839. We are obliged to Colonel Sabine for these corrections.

Ready for the Press,

Cometic Orbits, with copious Notes. By Edward J. Cooper, Esq.

The object of the compiler of this work was to produce a catalogue of those comets whose orbits have been computed, together with such notes on their physical appearances, as should save astronomers the trouble of reference to a great many volumes of works written in different languages, and, in fact, prove a useful manual.

The catalogue will contain 198 distinct comets and 786 orbits. The volume will be printed and bound uniformly with the *Markree Catalogue of Stars near the Ecliptic*, and its price will be 5*s*.

The Royal Society takes sixty copies.

The attention of astronomers is particularly called to the following work, *The History of Physical Astronomy from the Earliest Ages to the Middle of the Nineteenth Century*, by Robert Grant, F.R.A.S., in 1 vol. 8vo. pp. 638.

Mr. Bishop presented a copy of the tenth hour of his ecliptic charts which has recently been engraved. It is exceedingly clear and distinct, and perfectly adapted to its object, namely, to facilitate the search for new planets.

Mr. Nasmyth suggests that all telescopic observations should be invariably accompanied with a notice of the focal length, aperture, and magnifying power of the telescope employed. If a uniform system were adopted, very little space would be lost even by a frequent repetition. The focal length and aperture might be in inches and decimals of an inch, thus: 42, 3·75; 80, would describe a $3\frac{1}{2}$-foot telescope, aperture $3\frac{3}{4}$ inches, and power 80.

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